ENSP – Environmental Economics

NOTE: always refer to the Schedule of Classes for the most up-to-date information regarding course offerings, prerequisites & restrictions.

ENSP Core

Course	Title	Credits
All three:		
ENSP101 (NS)	Intro to Env Science (Fa)	3
ENSP102 (HS)	Intro to Env Policy (Sp)	3
ENSP400 (SP)	Senior Capstone	3
Applied Science and Policy (one)		
ENSP305	Appl Spatial Methods (F)	3
ENSP306	Qual Research/Env Sci (Sp)	3
ENSP330	Environmental Law	3
ENSP340	Sci, Ethics, Law: Water (Fa)	3
ENSP342	Oceans: Integ. Policy (Sp)	3
ENSP360	Food/Water/Glob Health (Fa)	3
ENSP350	Energy: Science & Policy	3
ENSP370	Environmental Justice (Sp)	3
Calculus (pick one)		
MATH120 (MA) or	Elementary Calculus	3
MATH140 (MA)	Calculus I *(recommended)*	4
Statistics (pick one)		
See page 2.	See page 2.	

Four (4) courses from the 5 groups below:

		Credits
Biology		
BSCI160 &	Ecology & Evolution	
BSCI161 or BSCII80	Evol. lab or Prin. Bio. Lab	4
Chemistry		Credits
CHEM131/132 (NL)	Gen Chemistry I/Lab	4
Earth Sci (pick one)		Credits
AOSC200/201 (NL	Weather & Climate/Lab	4
ENST200 (NL)	Fund of Soil Science	4
GEOG201/211 (NL)	Geog Environ Sys/Lab*	4
GEOL100/110 (NL)	Physical Geology/Lab	4
GEOL120/110	Environmental Geology	4
	**recommended*	
Economics (pick one, req'd)		Credits
AREC240 (HS)	Intro to Econ and Env	4
AREC241 (HS, IS)	Env, Econ, and Policy	4
ECON200 (HS)	Princ of Micro-Econ	3
Geography (pick one)		Credits
GEOG130 (HS)	Developmental Geography	3
GEOG140 (IS)	Natural Disasters	3
GEOG170 NS)	Meth of Geospatial Anal	3
GEOG202 (CC)	Intro to Human Geog	3

ENSP Graduation Requirements

_____ Students must earn C- or higher in all courses used for ENSP Core and Concentration requirements.
_____ Students' major GPA must be 2.0 or higher.

General Education

Fundamental Studies (15 credits)

Requirements	Course	Cr
Academic Writing (AW)		3
Professional Writing (PW)		3
Oral Communication (OC)		3
Math (MA)	Calculus	3-4
Analytical Reasoning (AR)		

Distributive Studies (25 credits)

Requirements	Course	Cr
Natural Sciences w/Lab (NL)	ENSP Lab Sci	4
Natural Science (NS)	ENSP101	3
History and/or Social Sci (HS1)	ENSP102	3
History and/or Social Sci (HS2)	ECON201	4
Humanities (HU1)		3
Humanities (HU2)		3
Scholarship in Practice (SP, major)	ENSP400	3
Scholarship in Practice (SP, non-major)		3

I-Series (6 credits)*

* May double-count with Distributive Studies

Requirements	Course	Cr
I- Series (IS)		3
I- Series (IS)		3

Diversity (4-6 credits)*

* May double-count with Distributive Studies

Requirements	Course	Cr
Understanding Plural Societies (UP)		3-6
Understanding Plural Societies (UP) *or* Cultural Competency (CC)		0-3

Experiential Learning (0-3 credits)*

* May overlap with major requirements

Requirements	Course	Cr
Practical experience is not required, but is strongly recommended.		

ENSP – Environmental Economics

REQUIREMENTS:

ECONOMICS FOUNDATION - Choose Track 1 or Track 2. (4 courses, 12-13 credits)

TRACK 1: Preparation for PhD programs in Economics and quantitative careers that produce economic analysis. Students who choose this track should strongly consider Area 4 Restricted Electives and/or a Minor in Mathematics.

Course	Description	Cr	Prerequisites/Notes	Grade
ECON201	Princ of Macro-Economics	3		
MATH141	Calculus II	4	MATH140	
ECON321* *or* STAT400 *	Economic Statistics Applied Probability and Statistics I	3	ECON200, ECON201, and ECON300** MATH141	
ECON326	Intermediate Microecon Analysis	4	ECON200, ECON201, and ECON300**	

** These courses fill the ENSP Core Statistics requirement*
*** ECON300 can be replaced with MATH241 + any statistics course*

TRACK 2: Preparation for Master's programs in Public Policy, Law, and careers that involve decision-making informed by economic analysis.

Course	Description	Cr	Prerequisites/Notes	Grade
ECON201	Princ of Macro-Economics	3		
ECON230* *or* BMGT230*	Applied Econ Statistics Business Statistics	3 3	ECON200 and 201; MATH111 or MATH220;	
One from:				
MATH141	Calculus II	4	MATH140	
ECON424	Applied Econometrics	3	ECON305 or ECON306, and ECON230 or BMGT230	
AREC422	Econometric Analysis in Ag & Env Econ	3	AREC326 or ECON326	
AREC380	Data Science for Env .& Res.Econ.(F)	3	ECON200 or equiv.	
AREC382	Computer-Based Anal in AREC	3	Jr. Standing ENSP101 & 102, GEOG373 preferred	
ENSP305**	Applied Quant. Methods in Env Sci	3	Jr. Standing ENSP101 & 102	
ENSP306**	Applied Qual Methods in Env Sci.	3		
AREC326	Interm Applied Microecon	3	ECON200, MATH120 or 140	

** These courses fill the ENSP Core Statistics requirement*
***Cannot double count with ENSP Applied Science and Policy requirement*

RESTRICTED ELECTIVES INSIDE ECONOMICS (5 courses, 15 credits)

Note: courses selected here may not "double-count" with other concentration requirements.

Choose four (4): .

Course	Description	Cr	Prerequisites/Notes	Grade
AREC422	Econometrics (Sp)	3	ECON326 *or* AREC326	
AREC453	Natural Resources and Public Policy (F)	3	ECON326 or AREC326, and BMGT230	
AREC454	Economics of Climate Change (Sp)	3	ECON326 or AREC326	
AREC455	Economics of Land Use (F)	3	ECON326 or AREC326, and BMGT230	
AREC456	Energy and Environ Economics (Sp)	3	ECON326 or AREC326	
AREC466	Transp. Engineering, Econ, & Policy (Sp)	3	ECON230 or BMGT230, AREC326 rec	
AREC481	Environmental Econ (Sp)	3	AREC326; ECON230 or BMGT230	
ECON454	Theory of Publ. Fin. & Fiscal Fed (F)	3	ECON306 (or ECON326) and ECON230, BMGT230, dept. perm.	

Choose one (1):

Course	Description	Cr	Prerequisites/Notes	Grade
AREC365	Hunger, Pop, and Food Supplies	3		
AREC380 ***or*** ENSP305	Data Science for Env & Res Econ (F) Applied Quant Methods in ENSP (F)	3 3	ECON200 or equiv ENSP101, 102, GEOG373 rec.	
AREC430	Intro to Agric and Resource Law (Fa)	3	AREC326	
AREC433	Food and Agricultural Policy (Sp)	3	ECON326 or AREC326	
AREC445	Agric Dev., Pop Growth, & Env.	3	ECON326 or AREC326	
AREC489L	Ag Water Qual: Policy/Legal Issues	3		
ECON454	Theory of Publ. Fin. & Fiscal Fed (F)	3	ECON326 and [ECON230, BMGT230, or ECON321[	
ECON456	Law and Economics ** (Sp)	3	ECON326 and [ECON230 or BMGT230]. Dept Perm	

*** Due to severe over-enrollment in Economics, ENSP students should prepare to enroll in AREC courses in this category.*

RESTRICTED ELECTIVES OUTSIDE ECONOMICS: 12 credits, 4 courses in one (1) supporting area below. Other courses are allowed as Restricted Electives with advisor approval in advance. Note: courses selected here may not "double-count" with other concentration requirements.

>>> Area 1. Social Science. *At least 9 credits must be 300- or 400-level.*

Course	Description	Cr	Prerequisites/Notes	Grade
AGNR301/PLCY301	Sustainability	3		
ANTH266	Changing Climate, Changing Cultures	3		
ANTH450	Theory & Practice of Environ Anthro	3		
ANTH451	Environmental Archeology	3		
ANTH452	Anthropology and Climate Change	3		
GEOG335 or 435	Population Geography – renumbered	3		
ENSP386	Internship	3	May use FGSM398 in its place	
ENST436	Emerging Environmental Threats	3		
FIRE298	FIRE Sem. 3: Sustainability Analytics	3	Sustainability Analytics track only	
FGSM340	Energy and Environmental Policy	3	Must be in Federal Fellows program	
GEOG301	Advanced Geographical Environ. Systems	3		
GEOG330	Society & Sust. in a Time of Great Change	3		
GEOG331	Intro to Human Dimen of Global Chng	3	GEOG201 or 202; or ANTH220 or 260	
GEOG332	Economic Geography	3		
GEOG373	Geographic Information Systems	3		
GEOG415	Land Use, Climate Change and Sust	3	GEOG 306 or permission.	
GEOG416	Concep. & Modeling Human-Env. Interactions	3	MATH120 or MATH140	
GEOG417	Land Cover Characterization/Remotely Sensed Data	3		
GEOG421	Regional Geography: China	3		
GEOG422	Regional Geogy: Sub-Saharan Africa	3		
GEOG423	Regional Geography: Latin America	3		
GEOG430	Climate, Energy, and Policy	3		
GEOG431	Culture and Natural Resource Mgt	3		
GEOG437	Political Geography	3	-	
GVPT200	International Political Relations	3	GVPT 100 or ENSP102	
GVPT306	Global Ecopolitics	3	GVPT 200	
SOCY410	Social Demography	3	6 credits of sociology or dept perm	

>>> Area 2. Earth Science

Course	Description	Cr	Prerequisites/Notes	Grade
AOSC375/GEOL375	Intro to the Blue Ocean (Fa)		MATH120 or 140	
AOSC360	How to Solve the Climate Change Problem?(Sp)			
AOSC400	Physical Meteorology of the Atmos (Fa)		(PHYS171, PHYS161, or MATH141); or perm	
AOSC447	Machine Learning in Earth Science		MATH140	
CHEM231/231	Organic Chemistry I		CHEM131/132	
ENSP386	Internship		May use FGSM398 in its place	
ENST200	Fundamentals of Soil Science		CHEM131/132; cannot double count	
ENST452	Wetland Restoration (Sp)		BSCI160 and [BSCI161 or BSCI180]	
ENST423	Soil-Water Pollution (Sp)		ENST200 and CHEM231/232 or perm.	
ENST430	Wetland Soils (Sp)		ENST200	
ENST441	Sustainable Agriculture (F)			
GEOG301	Adv Geographical Environmental Sys (Sp)		GEOG201/211	
GEOG415	Land Use, Climate Change, & Sust.			
GEOG441	The Coastal Ocean (Sp)		GEOG201/211	
GEOL340	Geomorphology		GEOL100 or 120, GEOL110	
GEOL437	Global Climate Change: Past & Present (Sp)		MATH120 or 140 &GEOL100 & CHEM131/32	
GEOL451	Groundwater (F)		CHEM131/132, GEOL100 or 120, GEOL110	
GEOL452	Watershed and Wetland Hydrology (F)		CHEM131/132 & GEOL100/110 or perm.	
GEOL453	Ecosystem Restoration (F)		CHEM131/2, MATH120 or 140; GEOL100 or ENST200	

>>> Area 3. Life Science *At least 9 credits must be 300- or 400-level.*

Course	Description	Cr	Offered	Prerequisites/Notes	Grade
BSCI207	Organismal Biology	4	Sp,Su,F	BSCI 170/171, BSCI 160/161, CHEM 131/132	
BSCI361	Principles of Ecology	4	Sp	BSCI 160/161 and Calculus	
BSCI363	Biol of Conserv and Extinction	3	F	BSCI 160/161	
BSCI370	Principles of Evolution (Fa, Sp)	3	F	BSCI 160/161, BSCI222	
BSCI462	Population Ecology	3	F	BSCI 160/161 and MATH 220	
BSCI467	Freshwater Biology (Fa)	3	varies	BSCI160 and [BSCI161 or 180]	
BSCI473	Marine Ecology	3	F	BSCI 207	
ENSP386	Internship	3	F,Sp,Su	May also use FGSM398	
ENST214	Intro to Natural Resources Management	3	Sp	BSCI160	
ENST373	Natural History of the Ches Bay	3	F		
ENST403	Invasive Species Ecology	3	F		
ENST410	Ecosystem Services: Integ. Anal.	3	F	BSCI 361	
ENST450	Wetland Ecology	3	F	BIOM 301 or permission of dept.	
ENST456	Spatial Analysis & Ecological Sampling	3	F	GEOG306 & GEOG373 recommended, dept perm	
ENST460	Principles of Wildlife Mgmt	3	F	-	
GEOG342	Intro to Biogeography		Varie3s		
GEOG442	Biogeography	3	F	BSCI361 or GEOG301	
PLSC471	Forest Ecology	3	Sp	BSCI 160/161	

>>> Area 4. Preparation for Graduate Work in Environmental Economics: Mathematics, Theory, Econometrics.

Course	Description	Cr	Offered	Prerequisites/Notes	Grade
MATH240	Introduction to Linear Algebra	4	Sp, Su, F	MATH 141 or equivalent	
MATH241	Calculus III	4	Sp, Su, F	MATH 141 and MATH 240	
ECON325	Intermediate Macroeconomics	3	Sp, Su, F	ECON200, ECON201, and ECON300**	
ECON414	Game Theory	3	Sp, F	ECON306 and [ECON230 or BMGT230]	
ECON422 or AREC422	Econometrics I Econometric Applications	3	Sp,F TBA	ECON 321 and [ECON325 or 326] ECON 306 or AREC326	
ENSP386	Internship	3	F, Sp, Su	May use FGSM398 in its place	
STAT401	Applied Probability and Stat II	3	Sp, F	STAT 400	

***ECON300 can be replaced with MATH241 + any statistics course*